

## Observational Evaluation of Mobile Source Emissions

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Ambient ratios of NO<sub>x</sub>, CO, and CO<sub>2</sub> sampled by aircraft in Houston and Dallas during the 2000 and 2006 Texas Air Quality Study (TexAQS) are compared with each other and with observations at a Houston highway tunnel. From these measurements we estimate 2000 and 2006 emissions for Houston and Dallas mobile sources. The observations demonstrate time-of-day variations in the relative contributions from gasoline and diesel combustion which are consistent with known traffic patterns. We incorporate CO<sub>2</sub> emissions derived from the Federal Highway Administration's motor vehicle fuel use statistics into the EPA's National Emission Inventory (NEI), resulting in an emission data set for NO<sub>x</sub>, CO, and CO<sub>2</sub> with 4-km spatial and hourly temporal resolution. Comparison of the emission ratios derived from the TexAQS observations with this inventory allows a direct evaluation of the NEI mobile source NO<sub>x</sub> and CO emissions.